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The Measurement and Analysis of Poverty and Inequality: An Application to Spanish Conurbations

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Summary

Poverty as a multidimensional phenomenon can be approached from different points of view. In this paper we study poverty in large towns in Spain taking into consideration three different definitions: a) relative monetary poverty, or scarcity of resources as compared with population averages, b) poverty measured through physical indicators, i.e. deprivation of certain goods, and e) subjective poverty. This last one appears to be related to inequality, which is also considered and analyzed. The source of statistical information used is the Spanish Household Budget Survey of 1990-91. Possibilities and drawbacks of this survey in the analysis of poverty and inequality are also reviewed.

Key words: Urban poverty; Monetary and physical indicators of poverty; Household Budget Survey; Poverty indices; Absolute and relative poverty; Subjective poverty; lnequality.

1 Introduction

The French political scientist Alexis de Tocqueville (1835), while comparing poverty in severa) European countries hundred and fifty years ago, discovered what he considered a "very extraordinary and apparently inexplicable" fact: that countries appearing to be the most impoverished were those which in reality accounted for the fewest indigents, while in the richest countries, a considerable part of the population was obliged to rely on the gifts of others in order to live. The explanation that he gave to this apparent paradox was that the more developed a society is, the more involved the population becomes in industrial production. But employment in the industrial sector is usually precarious, and incomes generated by it are particular)y sensitive to economic trends and fluctuations.

Tocqueville's explanation probably accounts for the growing areas of poverty that tend to caneen-trate in the large towns of industrialised countries. A diminishing workforce in industry, and a trend towards terciarization of employment are making social integration difficult for a considerable part of the population lacking the skills or ability to adapt to the rapidly changing demands of the labour market, thus generating a phenomenon known as "the new urban poverty".

This is a research field of increasing interest. The detection of groups particularly prone to poverty, or poverty pockets, is an essential item of information for policy makers, as it allows them to decide which sectors of the population require particular assistance, and to evaluate afterwards the consequences of these decisions on individual welfare. Still, it is not an easy task. First because poverty in general is a difficult question both from the theoretical and the methodological point of view, as it usually includes not only physical deprivation but also the more subtle concept of social exclusion. And also because the statistical information available is not always appropriate to reflect

the real conditions of the population on this particular issue.

In this paper we are trying to study, within the. frame of these Iimitations, poverty and inequality in large towns in Spain as compared with general poverty and inequality in the country.

We start with sorne methodological considerations on the concept and measurement of poverty, with an overview of the problems arising when trying to measure it. We then review the available data, analyzing their possibilities and drawbacks in the choice of a suitable indicator. In the following sections we study poverty in large towns, focusing it from three alternative points of view: the lack of monetary resources, the deprivation of essentials and the subjective feeling of exclusion. We also include sorne results on inequality. Finally, we summarize the main conclusions of our analysis.

2 The Concept and Measurement of Poverty

According to Sen (1976),two distinct problems must be faced in the measurement of poverty: a) identifying the poor among the total population and b) constructing an index of poverty using the available information on the poor. The first of these problems takes us to a basic methodological issue: What does being poor exactly mean?

Adam Smith (1776)described poverty as a lack of those necessities that "the custom of the country renders it indecent for creditable people, even of the lowest order, to be without". More than 200 years later, in 1984, the European Council declared that "the poor shall be taken to mean persons, families and groups of persons whose resources (material, cultural and social) are so limited as to exclude them from the mínimum acceptable way of life in the member state in which they live".

These are not the only possible definitions of poverty. Many others have been ·considered. In most of them poverty appears as a multidimensional phenomenon, associated with the concept of exclusion, and generally linked toa standard level ofreference, such as "the custom ofthe country", or "the mínimum acceptable way of Iife in the member state".

The fact that poverty is described in terms of lack of a variety of resources endows the concept of poverty with a multidimensional nature. As far as poverty is concerned the level of each individual should be represented as a n-dimensional vector, each of its components measuring the position of the individual with regard to each of the selected resources. So, one of the possible ways of approaching this question is to choose a number of goods and services considered essential, and to identify as poor anyone who lacks sorne of them. The Townsend deprivation index (1979), or proportion of lacking resources within the selected set of them, is a widely used instrument in measuring poverty through physical indicators.

Still, this methodology has also sorne drawbacks. First pf all, the selection of goods and services that could be considered as representative is usually a complicated task, for society is continually forcing new needs and demands upon the population. On the other hand, we have to make sure that deprivation of a particular ítem is unwanted, and due to lack of resources, and not to sorne other reason. This piece of information is not usually included in statistical data unless they have been expressly collected for this purpose.

For all these reasons, and also for the sake of simplicity, monetary indicators are usually preferred when dealing with poverty, as they provide a unidimensional synthesis of this plural phenomenon. Income, wealth and expenditure are the most popular ones.

From monetary indicators we can construct poverty lines. A poverty line is defined as a threshold · or level of the indicator below which people are called poor, and above which people are considered non poor. A poverty line allows not only to identify the poor, but also, to calculate the percentage of poor within a certain group, and to appreciate how poor they are, that is to say, how far they are from the threshold. This gives a very complete insight on the condition of the group as concerns poverty.

Different conceptions of poverty willlead to the use of different sources of information that will produce different poverty lines and will result in the identification of different poor. To begin with, we

can limit ourselves to consider monetary deprivation, or we can also focus our interest in the possible discomfort generated by a feeling of being excluded from the possibilities offered to other members of the community. In the first case we will restrict ourselves to the use of objective information, or data reporting the actual levels of the monetary indicator. In the second, we will also include subjective information, based on the perception of individuals about their monetary needs.

When only objective information is used poverty is identified either on the basis of the amount of the monetary indicator enjoyed, or of its relation to average values in the population. So we have here two different possible ways of approaching the subject. We can considera "basket" of essential needs independent, in principie, from the leve! of living of the group, and evaluate its cost at market prices. Anyone whose economic resources, measured through the selected indicator, will not allow him to acquire these essential needs will be classified as poor. This is the so called absolute poverty.

On the other hand, we have the relative poverty, which implies a condition of relative deprivation as compared with the standard welfare of the society. Relative poverty lines usually refer to sorne sort of average values of the distribution of the monetary indicator in the population, such as the mean, or the median.

As they are in no way connected with essential needs, what they really measure is not so much poverty a,s inequality within the group. In fact, people below these poverty lines are not necessarily in a state of deprivation. They are simply worse off than most of the others. Moreover, a proportional variation of the indicator over the population shifts the parameter of reference in the same direction, and consequently, the poverty line in the same proportion, with the result that the percentage of poor remains unchanged.

Absolute poverty lines were the first to be constructed. The technique of the basket of essentials was already introduced by Rowntree in 190l. Afterwards, the difficulty of selecting the items in the basket led to a modification of it, the Orshansky line, based on the assumption that the mínimum total needs of an individual and its basic needs of food will keep a constant proportion through all the group. In this case the problem of constructing an absolute poverty line is reduced to determining a basket of nutrients, a task far easier than deciding on a general basket. This line, has been criticized by severa! authors as can be seen in Ruggles (1990), but it is the one presently used in the U.S.A. and Canada. In the member states of the E.U. relative poverty !ines are generally preferred, !}nd these are the ones that we shall refer to when studying obj ctive poverty.

3 The Available Data

In the analysis of poverty and inequality the unit usually considered is not the individual, but the household. The idea behind this choice is that in our societies households constitute an economic unit in which resources are shared on equal terms by all its members as stated by Atkinson (1990). The consequence of this is that households act as filters that tend to dampen the poverty and inequality of personal distributions of income. So the information provided by the household gives a more accurate impression of the real leve! of welfare enjoyed by its members.

The main source of statistical information for the analysis of poverty and inequality in households, and the one recommended by the Statistical Office of the E.U. is the Household Budget Survey.

Our study is based on data from the most recent Spanish Household Budget Survey (SHBS), which was carried out in 1990-91 in arder to update the weighting factors for the Consumer Price Index. It is a complex random survey of considerable size, in which a large amount of information has been collected from approximately 24,000 households. But its main objective is not the analysis of inequality and pov,erty. When used for this purpose it shows a number of limitations, sorne of them concerning methodological issues and others related to the variables used as indicators. From the first we should like to outline that:

(a) Being a household survey, it excludes by design all the population not living in households,

which essentially means the homeless and people living in collective dwellings. For an analysis of poverty, this is a strong drawback: some of the very poor are not going to be considered in the study.

(b) As participation in the survey is not compulsory, there is a considerable rate of non response. Usually households with higher levels of income happen to be the most reluctant in completing the questionnaire. But people not being able to read and write fluently, or illegal immigrants, also tend to be uncooperative. We can thus expect that, even within the group of population living in individual households, some poverty pockets will be probably underrepresented. The incidence of non-response appears to be particular y strong in large towns, and this is probably affecting the validity of our results.

Apart from these limitations, the SHBS (Spanish Household Budget Survey) is a good instrument to measure static poverty. The information contained in it allows us to analyze this issue from different points of view. But there are still a few questions connected with the variables that should be mentioned.

Let us start with monetary indicators. Poverty is a rather more stable phenomenon than yearly income, whidi can vary substantially from one year to another. The concept of permanent income seems to adjust somehow better to the measurement of poverty. On the other hand, the economic resources of households do not depend only on their yearly income, but also on the stocks that they hold, as they can always choose to complete their income by running down capital. So wealth is also a variable to be considered. Unfortunately, our Household Budget Survey does not include any data on wealth, neither can this information be found in any other statistical source in Spain.

So we are left with the choice between income and expenditure. There is not a general agreement on which of these variables is a better indicator of welfare. Each of them has advantages and disadvantages and, in fact, both are used for this purpose.

Expenditure is a more stable variable, and is generally considered to follow more closely the pattern of permanent income. Still, it is far from being the perfect indicator for poverty. A low level of expenditure does not necessarily mean a low level of welfare: households with similar levels of permanent income can be very different in their expenditure patterns, owing to different preferences or habits. It also happens that households in different stages of their life cycle can differ greatly in their needs. And living in an urban habitat requires some expenses that are not so necessary in rural areas. On the other hand, availability of public goods and services can produce an increase of welfare without extra expenditure.

Another important methodological problem connected with expenditure data in the SHBS is that in some cases the timing of their collection can lead to an overestimation or underestimation of the real expenditure pattern of the household. This is nota problem when we work with aggregated data, because the two types of errors tend to compensate. But it can affect the results of a study on poverty, where we have to deal with the microdata from each individual household. Expenditure in food, for example, is collected over one week. If during this particular week the household has made a big monthly shopping its annual level of expenditure will be overestimated. And this will also be the case for a household which has bought a durable good of some entity, such as a car, during the year.

For all these reasons, disposable income is often considered a better indicator of welfare. Also the source of information that we are using allows for an estimation of income that includes income in kind, thus adjusting reasonably well to the concept of standard of living. The main problem with income is that households tend to underreport it. In the case of Spain, this fact is confirmed by figures. According to our more recent SHBS the average expenditure of Spanish households amounts to a 1 11% of their average income. Comparison with the aggregated results in the National Accounts shows that the rate of underreporting depends largely on the source and type of income, which enhances the difficulty of constructing good estimates from the data. Considering all these problems it seems a good idea to base our study on both variables--expenditure and income-and compare

the results obtained with each of them.

The SHBS also offers the possibility of analyzing poverty from the physical indicators approach, as it includes a number of questions concerning household equipment and other relevant issues that can be used to this end. The great limitation of SHBS on this point-which has been overcome in the new European Community Household Panel-is that households do not record whether deprivation of each item is due to lack of resources orto other reasons: that they do not want or need it.

In what concerns subjective poverty, a group of questions on how the household feels about its economic situation and which are its estimated needs has been added to the more recent SHBS. We will go into detail on this point in section 6.

4 Poverty Measured with Monetary Indicators

Although the household is a more appropriate unit of information than the individual for an analysis of poverty and inequality, household income or expenditure do not seem to be good indicators of the standard of living. Household income being equal, a family of two members is likely to be far better off than a family of six. Other units of analysis are probably a better choice.

The selection of the unit of analysis leads us into the problem of equivalence scales. As members of a household are assumed to share their resources, it is stated that this will probably result in economies of scale, which means that, although households with more members will need higher levels of income in order to enjoy the same standard of living the increase is expected to be less than proportional. Data can be adjusted to this assumption by means of an equivalence scale. It has also been pointed out that members of the household in different stages of their Iife cyde will probably not need the same amounts of expenditure. If this is the case, the age of household members, as well as the size, should be taken into account when constructing the equivalence scale.

The choice of an equivalence scale is a fundamental decision in any study on poverty. A range of different methods have been used to construct them, and different scales-which ultimately mean different weighting schemes for household members-will result in different figures for the equivalent income or expenditure, thus changing the relative position of the household in the ranking and, consequently, identifying different households as poor when relative poverty is analyzed. Scales giving low weights to members of the household other than the first, or to children, will make small families look poorer. So the choice of scale can significantly affect our conclusions concerning the extent and composition of the population with low income, as shown by Buhmann (1988).

Several equivalence scales are currentiy employed. For example, household income or expenditure results from using the scale that gives a weight of 1 to the first member, anda weight ofO to the others. When every member of the household is equally weighted we get per capita income or expenditure. Economies of scale can be evaluated in many different ways. One of them is the so called OECD scale, very often used in EUROSTAT studies, which gives a weight of 1 to the first member and 0.7 to any other member if he/she is an adult, or 0.5 if he/she is a child under fourteen.

None ofthese equivalence scales is completely justified on theoretical grourids. All ofthem inelude an element of arbitrariness in their foundation, and have been criticized on account of it. As there does not seem to be a general agreement on any of them, we have decided to base our analysis on per capita figures.

The average annual per capita expenditure of all households, according to the SHBS of 1990-91 is of 808,476 pesetas. The poverty line based on a 50% of the mean has a threshold of 404,238 pesetas, and the lines based on 40% and 25% of average expenditure have thresholds of 323,390.4 and 202, 119 pesetas respective[y. This last one is usually referred to as the extreme poverty !ine.

As the average per capita household disposable income is 727,360 pesetas, the percentages considered produce thresholds of 363,680, 290,944 and 181,840 pesetas respectively.

The proportion of households that are classified as poor, or headcount ratio, can be seen in the first

Table 1

POVERTY INDICES (Threshold calculated with al/ households)

EXPENDITURE PER CAPITA

Threshold: 25% of average

	H		FGT2	FGT3	FGT4	HAG
Towns over 500,000	0.010	0.200	0.002	0.001	0.000	0.000
National	0.021	0.220	0.005	0.002	0.001	0.000

Threshold: 40% of average

	H		FGT2	FGT3	FGT4	HAG
Towns over 500,000	0.039	0.231	0.009	0.003	0.002	0.001
National	0.102	0.230	0.023	0.009	0.004	0.002

Threshold: 50% of average

	H		FGT2	FGT3	FGT4	HAG
Towns over 500,000	0.088	0.216	0.019	0.007	0.003	0.002
National	0.190	0.250	0.048	0.018	0.009	0.005

INCOME PER CAPITA

Threshold: 25% of average

	H		FGT2	FGT3	FGT4	HAG
Towns over 500,000	0.009	0.333	0.003	0.001	0.001	0.000
National	0.021	0.270	0.006	0.002	0.001	0.001

Threshold: 40% of average

	H		FGT2	FGT3	FGT4	HAG
Towns over 500,000	0.047	0.213	0,010	0.004	0.002	0.001
National	0.087	0.250	0.022	0.009	0.005	0.002

Threshold: 50% of average

	H		FGT2	FGT3	FGT4	HAG
Towns over 500,000	0.092	0239	0.022	0.008	0.004	0.002
National	0.166	0.260	0.043	0.017	0.009	0.004

H: headcounts ratio
1: income gap ratio
FGT: Foster, Greer and Thorbecke
HAG: Hagenaars

Source: The Spanish Household Budget Survey 1990-91

Table2

ROBUSTNESS OF THE PROPORTION OF POOR TO CHANGES IN THE EQUIVALENCE SCALE

EXPENDITURE

	2S% of average		40% of average		SO% of average	
	Per capita	O.C.D.E.	Per capita	O.C.D.E.	Per capita	O.C.D.E.
Towns over 500,000	0.010	0.007	0.039	0.039	0.088	0.077
National	0.021	0.020	0.102	0.094	0.190	0.175

INCOME

	2S% of average		40% of average		SO% of average	
	Per capita	O.C.D.E.	Per capita	O.C.D.E.	Per capita	O.C.D.E.
Towns over 500,000	0.009	0.006	0.047	0.036	0.092	0.084
National	0.021	0.016	0.087	0.069	0.166	0.144

Source: The Spanish Household Budget Survey 1990-91

column of Table 1 under the heading H. For each of the thresholds mentioned we have calculated the proportion of poor among households residing in towns over 500,000 inhabitants, that we identify as large towns-and which include Madrid, Barcelona, Valencia, Zaragoza, Sevilla and Málaga-and the proportion of poor households all over the country.

Poverty, when measured by the proportion of households below the poverty line, appears to have less than average incidence in large towns. The result seems to be fairly robust to changes in the equivalence scale. As we move to the OECD scale the proportion of poor is slightly lower for both classifications, but not very different, as Table 2 shows, and the ratios are essentially the same. On the other hand, figures for large towns remain below national figures.

The head-count ratio measures the relative number of poor, or incidence of poverty, but does not measure how far these poor are from the threshold above which they would not be poor any longer. So we see that this measure does not give any information on the average income shortfall of the poor, or average deprivation. The average income gap ratio, 1, defined as the average income gap of the poor divided by the threshold, describes better this aspect of poverty, but it does not take into account the proportion of poor.

These two indices are intuitive, and easy to calculate: That is why they are widely used. But each of them gives only a partial view on the phenomenon. On the other hand, none of them are sensitive to the effect of transfers between the poor, neither do they satisfy some other consistency axioms and desirable properties.

For these reasons some other indices with better properties have been introduced. Among them we will use the Hagenaars index

$$HAG(y; z) = \frac{q}{n} \log(z) - \log(\text{¡·¿;}) \quad \text{og}( )$$

where y represents the leve! of income or expenditure of the household, z is the poverty threshold, n is the number of households considered in the group, q is the number of households below the poverty threshold and ¡.¿;, is the geometric average of the income or expenditure of these households.

Another posibility is to use any of the indexes of the Foster, Greer and Thorbecke family, which vary with a poverty aversion parameter a

$$FGTu(y; z) = \frac{1}{n} \sum_{t=1}^{q} \left[\frac{z - y_t}{z}\right]^{\alpha} \qquad \alpha > 0.$$

The higher the value of a, the higher the relative weight of the poorer households in the index. rom these we have selected PGTz-which happens to be equal to H*I-, PGT_3 and PGT_4.

The values of these indices for each of the selected indicator and threshold are shown in Table 1, calculated both over households located in large towns and over all the country. Comparisons between both figures show that in general poverty is smaller in large towns. But differences are far less significant when poverty is evaluated with the incorrie gap ratio, that is, the index which measures the poverty intensity. In fact, this index takes a surprisingly high value in large towns with extreme poverty when identified through income. That might be interpreted as a sign of higher intensity of poverty in large towns when households earning less than 25% of average income are considered.

Por households located in towns over 500,000 inhabitants, the average expenditure is 1,054,429 pesetas, and the average income is 955,192 pesetas. The thresholds for 50%, 40% and 25% of average are 527,214.5, 421,771.6 and 263,607.25 for expenditure and 477,596, 382,076.8 and 238,798 for income. Table 3 shows the sensitivity of our poverty measures to this change of thresholds.

5 Physical Indicators of Poverty

In the last section we have used relative poverty lines for the purpose of identifying poor households as those which, according to certain criteria, are poorer than the others. But these lines do not provide any information on the level of deprivation endured by these households. In countries in which absolute poverty lines have not been constructed, the only possibility to see how poor in absolute terms our relative poor are is the physical indicators approach.

With this aim we have selected a number of questions included in the SHBS concerning house ownership, household equipment and appliances, surface arca of the house, car ownership, and also sorne others connected with financia! problems of the household. They are recorded in Tables 4 to 6. All of them were answered either affirmatively or negatively by the households except for the last four, which require a quantitative response. Table 4 provides information for all households in the country and for those located in large towns. Tables 5 and 6 giv¡¡: this same information but restricted to households classified as poor according to each of the thresholds established in the last section.

At this point we should like to emphasize that the interpretation of the figures in these tables should be made with sorne reservations, and always bearing in mind that a) as has already been mentioned, we do not know whether deprivation is due to lack of resources or to the free will of the household, and b) the size of the sample for sorne of the classifications considered is small, and estimations provided by it may not be very reliable.

Tables 4, 5 and 6 show that, within the class of households located in large towns, those which are classified as poor are less equipped than the average in every household amenity except for black and white TV's, an item obviously substituted by a colour TV when families are better off, and whose ownership appears as a clear indicator of poverty. Por the rest, the difference between the poor and the non poor households is considerable for heating, air conditioning, vacuum cleaners, computers, dishwashing machines and cars, and also for sorne other characteristics, such as house ownership, surface area of the house and difficulties to make ends meet. On the other items, i.e. indoors bathroom, telephone, hot running water, freezer, automatic washing machine, colour TV set, video and HI-FI equipment the differences are smaller.

If we now compare the average figures of the country with the ones calculated for households living in large towns we can see that the latter are better equipped in every ítem exeept black and white television sets. Thc diffcrence is remarkable for telephones, central heating, air conditioning, vacuum cleaners, dishwashing machines, videos, HI-FI equipment and computers, which could be

Table3

POVERTY INDICES (Threshold calcu/ated with households in big towns)

EXPENDITURE PER CAPITA

Threshold: 25% of average

	H	1	*FGTz*	FGT	FGT4	HAG
Towns over 500,000	0.019	0.263	0.005	0.002	0.001	0.000
National	0.053	0.226	0.012	0.004	0.002	0.001

Threshold: 40% of average

	H		*FGTz*	FGT3	FGT4	HAG
Towns over 500,000	0.098	0.235	0.023	0.008	0.004	0.002
National	0.210	0.257	0.054	0.021	0.010	0.005

Threshold: 50% of average

	H		*FGTz*	FGT	FGT4	HAG
Towns over 500,000	0.184	0.250	0.046	0.017	0.008	0.005
National	0.339	0.289	0.098	0.041	0.020	0.010

INCOME PER CAPITA

Threshold: 25% of average

	H		*FGTz*	FGT	FGT4	HAG
Towns over 500,000	0.021	0.286	0.006	0.003	0.001	0.000
Nationa1	0.048	0.250	0.012	0.005	0.003	0.001

Threshold: 40% of average

	H		*FGTz*	FGT3	FGT4	HAG
Towns over 500,000	0.105	0.238	0.025	0.010	0.005	0.003
National	0.190	0.258	0.049	0.020	0.010	0.005

Threshold: 50% of average

	H		*FGTz*	FGT_,	FGT4	HAG
Towns over 500,000	0.176	0.273	0.048	0.019	0.010	0.005
National	0.325	0.280	0.()91	0.038	0.019	0.009

H: headcounts ratio
1: income gap ratio
FGT: Foster, Grecr and Thorbccke
HAG: Hagenaars

Sourcc: Thc Spanish Houschold Budget Survey 1990--91

Table 4

HOUSEHOW EQUIPMENT

	Towns over 500,000	National
Own their dwelling	72.0	77.8
lndoors bathroom	99.3	98.1
Telephone	93.0	76.9
Hot running water	98.1	94.4
Heating	34.4	26.8
Air conditioning	4.9	2.4
Freezer	87.7	83.5
Automatic washing machine	94.5	90.1
Vacuum cleaner	38.2	27.0
Black and white TV	11.8	15.4
ColourTV	97.0	92.3
Video recorder	53.8	44.4
Personal computer	16.2	11.0
Car	63.6	63.2
Dishwasher	16.6	9.2
HI-FI Equipment	43.3	30.9
Difficulties to make ends meet eventually	10.9	11.9
Difficulties to make ends meet often	3.1	3.1
Loans granted in the last 12 months	9.5	9.3
Surface (m^2)	81.2	88.43
Number ofbathrooms	1.08	1.06
Number of T.V. sets	1.14	1.06
Number of cars	0.75	0.74

Source: The Spanish Household Budget Survey 199()...91

Table *S*

HOUSEHOW EQUIPMENT

	Under 25% average expenditure		Under 40% average expenditure		Under 50% average expenditure	
	Towns over 500,000	National	Towns over 500,000	National	Towns over 500,000	National
Own their dwelling	20.2	58.2	44.0	69.1	48.4	69.8
Indoors bathroom	89.3	84.8	94.5	92.2	96.3	94.1
Telephone	58.9	30.3	64.9	56.1	73.0	52.1
Hot running water	81.3	68.3	86.2	80.6	93.0	85.1
Heating	2.7	4.6	7.4	9.5	13.5	11.9
Air conditioning	0.0	0.4	1.4	1.2	1.2	I.O
Freezer	68.2	68.8	75.0	74.2	77.0	76.9
Automatic washing machine	64.9	61.5	75.9	75.2	82.2	79.7
Vacuum cleaner	0.0	0.7	10.3	4.6	12.7	7.7
B1ack and white TV	10.8	23.0	11.5	19.3	15.1	18.1
ColourTV	89.2	72.6	90.0	80.4	90.4	83.8
Video recorder	28.1	17.5	33.4	24.5	32.4	28.7
Personal computer	0.0	1.3	9.3	3.5	6.9	4.0
Car	24.9	22.2	34.1	37.6	32.9	42.4
Dishwasher	0.0	0.0	0.7	0.4	I.O	I.O
HI-FI Equipment	2.5	6.4	24.6	12.5	28.7	16.1
Difficulties to make ends meet eventually	19.0	18.9	19.6	19.6	18.6	17.7
Difficulties lo make ends rneet often	41.2	16.4	16.7	8.8	11.7	7.4
Loans granted in the Iast 12 months	0.0	2.6	2.9	4.8	2.2	5.1
Surface (m^2)	63.0	75.22	64.60	79.80	60.8	82.01
Number of bathrooms	0.85	0.81	0.89	0.88	0.9	0.91
Number ofT.V. sets	0.89	0.74	0.93	0.83	I.O	0.88
Number of cars	0.25	0.23	0.35	0.40	0.3	0.45

Source: The Spanish Household Budget Survey 1990-91

Table 6

HOUSEHOLD EQUIPMENT

	Under 25% average income		Under 40% average income		Under 50% average income	
	Towns over 500,000	National	Towns over 500,000	National	Towns over 500,000	National
Own their dwelling	41.9	50.4	43.7	61.6	48.1	66.4
Indoors bathroom	88.4	89.3	93.6	94.9	96.5	96.0
Telephone	47.8	34.4	65.9	49.1	75.6	*55.9*
Hot running water	82.8	76.0	90.1	86.6	94.1	89.0
Heating	2.7	9.6	5.7	11.8	15.5	13.3
Air conditioning	0.0	0.7	1.2	0.8	1.1	1.1
Freezer	73.9	78.3	81.8	82.9	83.5	82.4
Automatic washing machine	88.5	79.6	92.4	87.2	89.3	86.9
Vacuum cleaner	12.9	4.3	12.1	7.8	14.3	10.8
Black and white TV	14.9	20.6	13.1	16.5	14.4	16.8
ColourTV	94.4	83.3	93.1	88.3	92.9	88.2
Video recordcr	41.1	35.7	48.1	37.5	44.2	37.4
Personal computer	5.9	4.8	4.1	4.4	9.4	6.6
Car	23.1	39.8	39.3	50.9	45.2	54.2
Dishwasher	0.0	0.9	1.1	1.0	2.4	1.7
HI-FI Equipment	33.3	18.4	34.3	19.8	33.2	21.5
Difficulties to make ends meet eventually	22.9	28.5	25.4	25.8	23.3	21.8
Difficulties to make ends meet often	43.6	22.3	16.5	11.0	14.8	9.3
Loans granted in the last 12 monhts	8.4	9.0	6.2	9.8	9.4	9.5
Surface (m^2)	65.29	76.32	73.06	81.73	71.85	83.05
Number of bathroorns	0.95	0.89	0.95	0.94	0.96	0.96
Number ofT.V. sets	0.98	0.87	1.04	0.94	1.02	0.94
Nurnber of cars	0.27	0.45	0.42	0.54	0.48	0.58

Source: The Spanish Household Budget Survey 1990-91

taken as indicators of urban condition in our country. But urban households show a lower proportion of house ownership, and the surface area of the dwelling is also, on average, much smaller. Also, a higher rate of them report having financia! problems from time to time.

Most of the previous results are still valid when we compare for each threshold the equipment of poor households in the country with the one enjoyed by similarly poor households in large towns. But sorne new ones are worth commenting. Poor households in big towns seem to be particularly well provided with hot running water as compared with the average poor, while sorne amenities that were identified as indicators of an urban condition, such as heating, air conditioning and dishwashers happen to be less frequent in urban households below the 40% threshold than in the equivalentiy poor households all over the country. Car ownership rate, slightly above average in large towns, appears clearly below average when we limit our consideration to poor households. Among these eventual financia! problems and loans granted in the last twelve months are less frequent in urban households. On the contrary, a proportion of them higher than average reports having financia! problems on a regular basis.

Summarizing our comments we can say that, although households in large towns are clearly better equipped than the average Spanish household, this is not always the case when we limit our observation to relatively poor households.

6 Subjective Poverty

Most of the usual definitions of poverty are related in sorne way to the concept of exclusion. But, while deprivation implies lack of concrete items, and ultimately lack of moriey, exclusion is to a certain extent connected with personal feelings. Members of a household lacking a number of amenities-or enjoying a comparatively low leve! of income or expenditure-may not have a feeling of exclusion if their deprivation is also shared by their neighbours, while others that are wealthier and better equipped but surrounded by more affluent people can feel themselves clearly excluded from opportunities that have become standard in their environment. Poverty focused from this point of view can only be approached on the basis of subjective information.

In this section we are going to describe two possible methods of analyzing subjective poverty. One of them is the construction of the subjective poverty lines, of which we will consider only the two more widely used, Kapteyn and Leyden poverty lines. The other is the household perception method.

In the member states of the E.U. the more recent SHBS includes a group of subjective questions especially designed as basic information for these techniques. The question that will allow to calculate the Kapteyn subjective poverty line is:

In your opinion, what must be the absolute minimum net income for a household like yours to be able to make ends meet?

Kapteyn assumes that this number, fixed by each household, will depend on its size and also on its real income; rich households will tend to overestimate their mínimum needs, while the poor will probably befar less demanding. So he suggests to estímate the following equation:

$$\text{logy}; = f3o + \text{f3tlog } f_j + \text{fJ2logy}; + u;.$$

Where f stands for the size or number of members in the household, y for the income and y^* is the absolute mínimum net income reported as an answer to the question. This equation is estimated by the least squares method, thus somehow averaging thc perception of the households about their needs.

The second assumption of Kapteyn is that households having an income close to their mínimum will probably be the ones fixing y^* more accuratcly. So, by making the following change in the

estimated equation

$$\text{logy}^* = \text{logy}$$

he finally gets

$$\text{logy}^* = \frac{fJo + fJ_i \text{loaf}}{1 - fh}$$

which gives a poverty threshold for each family size. A household of a given size will be classified as poor if its income is lower that the y^* given by the poverty line for this particular size.

We have calculated the Kapteyn poverty line with the infonnation provided by the more recent SHBS.It is

$$\text{log}(y^*) = 10.98345 + 0.507850 \log(f).$$

Experiences with this line have shown that households tend to overestimate their minimum needs. In order to Iead them to give more accurate infonnation, a group of researchers from the University of Leyden proposed to ask the same question in a rather more elaborate fonnat:

Please try to indicate what you consider to be an appropriate amount for each of the following: Under my (our) conditions I would calla net income per month of

about. . . . . very bad
about . . . . . bad
about. . . . . insufficient
about . . . . . sufficient
about . . . . . good
about . . . . . very good

The six figures reported by each household are used to estimate its particular utility function. In order todo that, a cardinal utility function has to be chosen. In the construction of the Leyden poverty line the selected one is the lognonnal distribution function.

For each household a utility function is estimated by assigning to each of the six answers intervals of equal length-a sixth of the total utility-and adjusting a lognonnal distribution function to the resulting six points. Due to its connection with the norrrial distribution the utility function of each household can be described by two parameters: the mean and the stlmdard deviation.

Now a technique similar to the one employed for the Kapteyn line can be applied by assuming that the mean of each individual utility function depends on the size and income of the corresponding household. This leads to estimate the linear equation

$$f..L_i = fJo + fJ_i \log f_i + fJz \log y_i + u_i.$$

Then, averaging the standard deviations, and fixing a utility leve) w^* considered as the minimum acceptable-which in EUROSTAT studies is usually taken at 0.4-the Leyden line is finally obtained as:

$$\text{logy} = \frac{fJo + \{J_i \log(f) + au(w^*)}{1 - fJz}$$

where $u(w^*)$ is the ordinate of the normal curve such that $N(u(w^*); 0.1) = w^*$. A more detailed theoretical introduction to subjective poverty lines can be found in Hagenaars & Van Praag (1985).

The Leyden poverty line calculated for Spain is:

$$\log(y^*) = 10.60403195+0.404511751\log(f).$$

Households with incomes below the threshold corresponding to their size will be classified as poor according to the Leyden criteriüm.

Although both Kapteyn and Leyden lines make use of subjective information, the regression techniques applied average it, with the result that the overestimation of their needs by sorne households will be, at least partly, compensated with the underestimation of others. The threshold finally obtained could adjust very poorly to the individual perception of a number of households. It might very well happen that households above this threshold-and consequently classified as non poor-actually perceive themselves as poor.

The individual perception of households is reftected in the answer to another question included in the survey:

How would you characterise your household's economic situation during the last twelve months ?:

1 *rich*
2 *above average*
3 *average*
4 *below average*
5 *almostpoor*
6 *poor*

The household perception method identifies as poor those households that classified themselves in this category. They will not be necessarily the same as the ones below the threshold of the subjective poverty lines.

Table7
SUBJECFNE POVERTY

	Towns over 500,000	National
Kapteyn line	0.122	0.222
Leyden line	0.031	0.049
Household perception	0.030	0.039

Source: The Spanish Household Budget Survey 1990-91

Table 7 shows the percentage of households classified as poor according to each of the two subjective poverty lines and to the household perception method, both in large towns and for all of the country. The first thing that we can observe is that the proportion of poor according to the Kapteyn line is by far the highest, higher in fact than the rate of households below 50% of average expenditure or income. This result is shared by most European countries, and confirms the inaccuracy with which households frequently answer this question.

The Leyden poverty line and the household perception method provide more reasonable percentages, not far from the 40% of average objective lines. But now the rate of urban poverty as compared with overall poverty in the country is higher -in fact, much higher with the household perception method-than when calculated with objective poverty lines. The proportion of household perception poverty in large towns is 0.77 times the overall poverty, while with objective lines the rates vary between 0.38 and 0.56.

These results seem to indicate that the subjective perception of poverty in households living in large towns tends to be stronger than could be expected from their reallevels of income and expenditure.

7 An Analysis Through Specific Inequality

A possible exp}anation for the relatively overstated insatisfaction showed by urbait households could be the fact that they are generally inmersed in a wealthier environment. Figures of average per capita household income and expenditure seem to confirm this assumption. When calculated for households living in large towns they amount to approximately 1.3 times the national averages. It would be interesting to see if the higher feeling of deprivation shown by these families can be justified in terms of inequality.

Inequality can be measured with a number of possil}le índices that synthesize in a single figure the information contained in the distribution of income or expenditure. As was the case with the poverty índices, this $ynthesis implies a certain loss of information. None of the different inequality índices is able to capture all the information contained in the original data. Each of them emphasizes different aspects of the distribution and enjoys different properties. For this reason a set of índices is usually calculated in order to ascertain the robustness of the ordering provided by them.

In our analysis we will use the Gini index-which has a very intuitive connection with the Lorenz curve-the variance of logarithms and several índices from the Theil and Atkinson classes, both of them enjoying good normative properties, as can be seen in Atkinson (1970). We will calculate Theilo, Theil¡ and Theih-which is equivalent to the squared coefficient of variation-and the Atkinson índices for values 0.5, 1, 1.5, 2 and 2.5 of the parameter.

Table8

INEQUALITY INDJCES

EXPENDITURE

	Theil O	Var log	Coef. varl	Theil 1	Gini	Atk. *0.5*	Atk. 1	Atk. 1.5	Atk. 2	Atk. 2.5
Towns over 500,000	0.187	0.354	0.564	0.202	0.357	0.092	0.171	0.240	0.306	0.371
National	0.185	0.359	0.522	0.194	0.342	0.090	0.169	0.240	0.307	0.372

INCOME

	Theil O	Varlog log	Coef. varl	Theil 1	Gini	Atk. 0.5	Atk. 1	Atk. 1.5	Atk. 2	Atk. 2.5
Towns over 500,000	0.195	0.362	0.878	0.226	0.359	0.098	0.177	0.249	0.319	0.3%
National	0.179	0.341	0.685	0.198	0.330	0.088	0.164	0.233	0.300	0.372

Souree: The Spanish Household Budget Survey 1990-91

The estimated value of these índices for the overall Spanish population ánd for the subclass of towns over 500,000 inhabitants are given in Table 8. When inequality is measured on per capita household expenditure figures are generally higher in large towns, although they tend to be very similar for the last índices of the Atkinson class, that is, the ones corresponding to higher values of the poverty aversion parameter, and which give more weight to households in the lower tail of the distribution. It might happen that many of these households are near the mínimum levels of per capita expenditure socially acceptable.

For income inequality, however, the values of the índices are conclusive. Per capita income inequality is clearly higher in large towns. That pro.bably accounts to a considerable extent for the comparatively deeper feeling of poverty experienced by urban households.

8 Conclusions

Household Budget Surveys are very often the only available source of data for the analysis of poverty and inequality. The information provided by them allows us to study poverty from several approaches, among which objective relative poverty based on monetary indicators, deprivation of a number of goods-mainly household amenities-and subjective poverty can be considered. Still, it has strong limitations. The exclusion of the homeless and people living in collective dwellings and the comparatively high rate of non response in large towns will probably lead to an underestimation of poverty in urban areas, associated, at least partly, with illegal migration.

Thus, when using the monetary approach we see that the incidence of poverty is not particularly high in large towns. But the intensity of extreme poverty, or poverty gap, measured on income, appears much above average. This can be interpreted as a hint of the concentration of very extreme poverty in urban areas.

With respect to the physical indicators considered in our analysis we can conclude that poverty makes a difference in the comparative level of household equipment of urban households. Generally speaking households located in large towns are better endowed, although some items are less frequently enjoyed in urban areas when we restrict ourselves to comparing poor households.

The subjective perception of poverty tends to be overstated by households in large towns with respect to the reported level of income and expenditure. But the distribution of income also happens to be more inequal in urban areas. This fact could possibly contribute to explain the comparatively higher demands of urban households.

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Résumé

La pauvreté est un phénomene multidimensionel qui peut etre defini de fa ons tres diverses. Daos cet article nous étudions la pauvreté daos les grandes agglomérations urbaines en Espagne de trois points de vue différents: la pauvreté objective, mesurée sur des indicateurs monetaires-le revenu ou les dépenses-et qui se define par raport a des valeurs moyens de la distribution, la privation evaluée avec des indicateurs physiques, e'est à dire, 1'absence de certains elements d'équipement du foyer consideres comme necessaires, et la pauvreté subjective, qui est fondée sur la perception que les foyers ont de leurs besoins. Les resultats obtenus avec cette demiere méthode sont tres liés a ceux de l'inégalité, qu'on étudie aussi. L'étude a été fait sur les données de l'Enquete Budgetaire des Ménages de 1990-91. On a tenu compte des possibilités et des problemes de cette enquete.

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